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ABSTRACT

These proceedings provide an overview of the major areas covered at a seminar on the relationship between vocational education and defense preparedness. Discussed first are strategies for improving collaborative efforts by vocational education and the Department of Defense for the purpose of increasing defense preparedness. The next five sections of the volume summarize the major ideas and outline the illustrative programs that conference participants introduced in their discussions of the following topics: a defense-related industrial base and Department of Defense active military forces, civilian employees, reserve military forces, and military accessions. Examined in the concluding chapter are the major points raised pertaining to each of these five areas as well as other roles for vocational education with respect to collaboration, outreach, and greater use of facilities and resources. Appendixes to the proceedings include a seminar agenda as well as remarks by the Deputy Secretary of Defense, the Secretary of Education, the executive director of the American Vocational Association, and the Assistant Secretary of Vocational and Adult Education. (MN)

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PROCEEDINGS

VOCATIONAL EDUCATION AND DEFENSE PREPAREDNESS SEMINAR

U.S. DEPARTMENT OF DEFENSE
U.S. DEPARTMENT OF EDUCATION

with the cooperation of the
American Vocational Association

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September 29 - October 1, 1982

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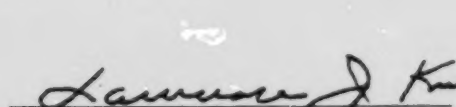
FOREWORD

This publication is a report of the proceedings from the Vocational Education Defense Preparedness Seminar conducted in Arlington, Virginia, September 29 - October 1, 1982. The impetus for conducting the seminar originated from an exchange of correspondence between Secretary of Defense Caspar W. Weinberger and Secretary of Education T. H. Bell during August 1981. Shortly afterwards, the Department of Education established the Office of Vocational and Adult Education (OVAE) Defense Preparedness Task Force which has continued this momentum to foster collaborative activities.

The purposes of the seminar were as follows: (1) identify currently operational vocational education programs supporting defense preparedness; (2) describe the programs' origins and discuss means for replicating them, and (3) identify resource personnel who could provide assistance in developing similar programs. Representatives from all branches of the Armed Services and key personnel involved in establishing the exemplary programs attended. The seminar provided opportunities for participants to interact with representatives from military installations and defense related industry to learn the scope of training needs.

We want to thank the members of the planning committee from the Department of Education, the Department of Defense, the American Vocational Association, and the State Directors of Vocational Education for their fine work in carrying out the many details of the seminar and in preparing the proceedings of the seminar for publication.



Lawrence J. Korb, Ph.D
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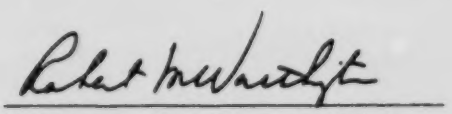

Robert M. Worthington, Ph.D.
Assistant Secretary for
Vocational and Adult Education
U.S. Department of Education

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I. IMPROVING COLLABORATIVE EFFORTS IN DEFENSE PREPAREDNESS: THE ROLE OF VOCATIONAL EDUCATION.

The current national concern for strengthening defense preparedness implies a role for vocational education in the expansion of our total national defense. Because of a need to clarify some of the parameters and opportunities for vocational education the Vocational Education and Defense Preparedness Seminar, sponsored by the Departments of Defense and Education with the cooperation of the American Vocational Association was held in the Sheraton National Hotel, Arlington, Virginia, September 29 to October 1, 1982. The seminar developed from an exchange of letters between the Secretaries of Defense and Education which reflected a high level concern and possible opportunities for collaborative efforts focusing upon this priority. It was designed to provide a setting for identifying training needs and for describing what is presently occurring in the field.

It became evident quite early in the process of identifying programs involving defense industries and installations that excellent working arrangements and communication take place at the local level. With the expansion of defense, vocational educators may become more involved in the training of personnel in new and expanding technical fields. The remarks of Secretary of Education T.H. Bell and Deputy Secretary of Defense Frank Carlucci made during the seminar provide a rationale for improving the collaborative efforts between the two communities (see Appendices C and D). Those of the Assistant Secretary of Education for Vocational and Adult Education Robert M. Worthington elaborate on the nature and requirements for such cooperative efforts (see Appendix F).

To strengthen the U.S. defense position, it will be necessary to insure that the nation's technological lead over our adversaries is maintained. Current evidence indicates that U.S. technological innovation is lagging. United States patents to foreign nationals has grown from 17 percent of the total issued in 1960 to 38 percent in 1979. In this same 20 year period, the foreign controlled portion of the U.S. consumer electronics market increased from 5.6 percent to 50.5 percent and the foreign market position for metal working machine tools grew from 3.2 percent to 28 percent. To meet peacetime defense needs between now and 1989 in skill fields ranging from riveters to electrical engineers, there must be an annual growth rate of over 3.8 percent.

During the course of the seminar it became clear that formal mechanisms already exist which allow for interaction between the educational, industrial and military communities. The seminar highlighted current examples of successful cooperation between the Military Services, industry and the vocational education community. It is hoped that the goal of the seminar, improved collaboration for defense preparedness, was met and that organizations at the service delivery level will have a clearer idea of how they may better cooperate and support each other.

The organization of this report parallels the seminar organization. During the seminar, five areas related to defense preparedness were discussed and illustrative programs were presented. The five areas were (1) Defense Related Industrial Base, (2) Department of Defense Active Military Forces, (3) Department of Defense Civilian Employees, (4) Department of Defense Reserve Military Forces, and (5) Department of Defense Recruiting Programs. The following sec-

tions include an overview of each topical area and summaries of the illustrative programs presented. The last section of the report contains a summary of the major points made during the seminar and suggested future directions. The appendices contain the seminar agenda, a list of attendees, and the speeches given by the Deputy Secretary of Defense, Secretary of Education, Executive Director of the American Vocational Association, and Assistant Secretary for Vocational and Adult Education.

II. DEFENSE RELATED INDUSTRIAL BASE

Overview

Cooperative efforts between industry and vocational education institutions are common occurences. These efforts include training and purchasing equipment. For example, vocational educators involve industry representatives through advisory committees in program planning and goal setting. If a major industry needs or expects to need certain skilled workers, vocational educators will consider these requirements in their program planning. Collaborative efforts may include leasing or utilizing equipment for operator training as well as essential employee and management training. Equipment arrangements may involve purchase by the vocational education institution or purchase by the involved industry with a subsequent loan to the vocational education institution.

The four case studies summarized below represent the types of cooperative efforts found between vocational education institutions and industry. All four are examples of successful efforts involving defense related industry. They are significant because they demonstrate one type of contribution vocational education already makes to defense preparedness, namely training in defense related industry. In addition, the four illustrate communication between the educational community and industry. Open communication helps create the climate for respect and the expectation that whatever job must be done will be done.

Case Studies - Defense Related Industrial Base

Project Title: Improving Skills of Tradesmen in Shipbuilding Industry: Ingalls Shipbuilding/Litton Industries

Presenters:

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Mickey Davenport
Manager, General Employment
& Training, Ingalls
Shipbuilding Corp.
Pascagoula, Mississippi 39567
(Tel. 601-935-5102)

Project Summary: Ingalls' work force of 12,400 is Mississippi's largest industrial employer. Starting in the late 1950's, the company has made use of the state's excellent vocational training facilities. To fulfill its skilled work force needs, the program has trained over 10,000 persons during a 10 year period. A variety of programs are offered to employees through vocational schools, Gulf Coast Jr. College, apprenticeship programs and on the job training programs. Programs include entry level training, those for skilled tradesmen, as well as others at the managerial level. The success of the program according to educators and company officials is based on factors such as: close coordination and cooperation between industry and education; programs and courses which are jointly designed by education and business to meet job requirements; state leadership and commitment; and industry support at top levels.

Funding: State, Federal, and Local funds plus support from Ingalls Shipbuilding.

Information: For further information, contact presenters.

Project Title: Bendix Corporation Program

Presenters:

Jim Myers, Dean
Occupational Education
Florida Jr. College
at Jacksonville
Jacksonville, Florida 32202
(Tel. 904-633-8284)

William Hartnett
Coordinator of Training
Bendix Corporation
Jacksonville, Florida 32217
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Project Summary: The Dean of Occupational Education at Florida Junior College at Jacksonville was instrumental in bringing education and Bendix together to develop and implement the training program necessary for start-up production in the Benedix plant. Florida provides educational assistance in developing and operating economic development projects. Students are selected prior to employment by Bendix and then are offered jobs after sucessful completion of the program. All courses were tailored to meet Bendix's needs to assure the ability of program completers to perform specific jobs.

Funding: Industry Services Training Section, Florida Department of Education

Information: For further information contact the presenters.

Project Title: Pratt and Whitney Program

Presenters:

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Associate Commissioner
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Maine Department of Education &
Cultural Services
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John M. Lyman
Manager, Technical Training
Pratt and Whitney Aircraft
400 Main St.
East Hartford, Connecticut 06108
(Tel. 203-565-4019)

Project Summary: This program grew out of the belief of the Maine Department of Education and Cultural Services Office that the quality of the work force is Maine's most important resource. The State is committed to providing:

- o Entry level training assistance to employers with an immediate demand for workers resulting from expansion in or relocation in the State,
- o Programs at vocational centers and technical institutes which are designed to meet manpower needs,
- o Upgrading/retraining, and
- o Training facilities

The project provided training in machine tools, inspection, and welding to over 700 Pratt and Whitney employees. All trainees were hired by Pratt and

Whitney at the beginning of training after screening by the employer and Maine Manpower Affairs. Project instructors were State employees. Training was initially conducted at the Southern Maine Vocational Technical Institute. Job specific instructional materials were jointly developed and used. Curriculum revision was accomplished based on an evaluation.

Industry and Education concurred on the following factors that made the program successful: (1) single point of contact for assistance; (2) flexibility - programs designed specifically for Pratt and Whitney and modified through evaluation; (3) and natural trust which developed between industry and education.

Funding: State, Federal and Local funds.

Information: For further information contact the presenters.

Project Title: Rockwell International

Presenters:

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Industrial Training Supervisor
State of Ohio
65 S. Front St., Rm 904
Columbus, Ohio 43215
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David A. Meyer
Manager, Technical Training
Rockwell International
Columbus, Ohio 43216
(Tel. 614-239-2922)

The program is sponsored by the State Economic Development Office in cooperation with the State Vocational and Career Education Office and Rockwell International. In this project the State provided a program coordinator located at the plant to help assure the program met company needs. Rockwell plays a strong advisory role by inputting requirements into programs in the following areas: curriculum, equipment, training methods, new technologies, and industrial environment.

Rockwell has over 25 years of experience in cooperating with vocational education to provide training opportunities for employees at entry level, in the skilled trades, for skill upgrading, and in high technology. These training programs are offered in cooperation with vocational schools, technical schools, and colleges, as well as with State specialized training consultants.

Education and industry leaders involved indicated that the keys to this effective and successful program were as follows: establishment of open communication between industry and education; vocational education system understanding of industrial environment; industry understanding of vocational education system and capabilities; and State Economic Development Office and State Vocational and Career Education Office commitment and cooperation.

Funding: State, Federal, and local support and from industry; State provides prime support.

Information: For further information contact the presenters.

III. DEPARTMENT OF DEFENSE ACTIVE MILITARY FORCES

Overview

Training active military forces represents a major activity in the Department of Defense (DoD). In Fiscal Year 1982, there were 1,176,999 graduates from specialized skill training courses for all the services. Generally the services are able to handle training for the majority of occupational specialties. In some technical skill areas, where there are relatively few individuals trained and comparable civilian training exists, it may be cost effective for the services to handle these training needs either by contracting with civilian institutions or encouraging already trained individuals to enter the service. A Navy program, the Lateral Entry Pilot Study, discussed below tests the viability of the latter procedure.

The training activities of the DoD also include advanced skill training or individual development. Some of the case studies which follow illustrate the types of cooperative vocational military programs which now exist. Other similar joint efforts have existed for some time within DoD. Since 1974 almost 300,000 students have graduated from DoD supported programs. One aspect of this program involved plant equipment loans to vocational programs. Equipment worth $52 million has been loaned to vocational programs and is now being utilized by 83,000 students.

Although the broad mission of each of the services may appear similar, the specific vocational education needs of a service or individuals at any local installation are a function of the organization's primary mission and may differ across installations or organizations. Consequently, some training needs may not be entirely satisfied through the usual military avenues and opportunities for vocational education involvment may exist.

Case Studies - Active Duty Military Training

Project Title: Education and Vocational Training at Fort Bragg, North Carolina

Presenters: Raymond E. Gatti
Director, Extension Education
Fayetteville Technical Institute
Fayetteville, NC 28307
(Tel. 919-497-5691)

Dr. William A. Edmundson
Director of Education
Fort Bragg, NC 28307
(Tel. 919-396-2009)

Project Summary: The programs at Fort Bragg include both long- and short-term specific education and training at the secondary and post secondary levels. They involve cooperation between the local, State, civilian, and military sectors. The North Carolina community college system, for instance, is heavily involved.

Programs are often designed to provide soldiers with basic skills including reading, mathematics, and English as a second language, as well as operational skills, such as communications, vehicle maintenance, and operation of military equipment. Much of the training is cooperatively conducted by the military and contracted with civilian secondary vocational or post-secondary institutions.

Offerings at Fort Bragg include 3000 courses (flexibly scheduled from 7:30 am to 10:30 pm to accommodate about 22,000 students), tuition-free skills development programs (in conjunction with three technical institutes), skill recognition programs supported by the Department of Labor and advanced skills programs designed to help non-commissioned officers to become better managers and communicators.

Funding: DoD Contract.

Information: For further information, contact the presenters.

Project Title: Job Oriented Basic Skills Training in the U.S. Navy

Presenters:

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Civilian Supervisor, Jobs
Naval Tech
Meridian Junior College
Highway 19 North
Meridian, Mississippi 39309
(Tel. 602-679-2680)

Dr. E.G. Aiken
Program Director
Navy Personal Research and
Development Center, Code 15
San Diego, California 92152
(Tel. 714-225-2371)

D. Fiene
Head, Navy Contract Programs
State Technical Institute
Memphis, Tennessee 38134
(Tel. 901-577-4111)

Dr. N. Kerr
Psychologist
Department of the Navy
Naval Air Station Memphis
Millington, Tennessee 38054
(Tel. 901-872-5594)

Project Summary: The U.S. Navy offers "A" level specialized skill training in thirty-five fields. As an off-shoot of these job-training programs, it provides, and is rapidly expanding, its remedial basic skills training programs (with emphasis on mathematics, vocabulary, and study skills). The Job-Oriented Basic Skill Training programs are both skill and image-builders and a high percentage of enrollees complete the programs. The problems faced, as with any programs conducted across various civilian sectors, include staffing, teacher certification, curriculum standardization, and curriculum organization and administration. On the whole, the program has been successful and shows a great deal of cooperation between vocational technical schools and the U.S. Navy.

Funding: DoD Contract.

Information: For further information contact the presenters.

Project Title: US Marine Corps, AC-Delco Corporation Technical Training Programs

Presenter:

Milton Weatherhead
AC Delco Corporation
10355 Lee Highway
Fairfax, Virginia 22030
(Tel. 703-273-2140)

Project Summary: AC-Delco maintains a training room and instructor at each of 31 General Motors (GM) Training Centers across the United States. Subjects taught include all phases of automotive repair, electrical systems and hydraulics, diesel mechanics, brakes, carburetors, emission control, and electronic fuel injection. A certificate is awarded upon successful completion of each class. There is no fee or tuition for AC-Delco training. Attendance is strictly voluntary and expected only as long as it is a benefit to the participants and their organization. Meals and lodging are at the expense of the student or his organization. The Marines and other services have taken advantage of the service provided by AC-Delco.

Funding: DoD Contract.

Information: For further information contact presenter.

Project Title: Community College of the Air Force

Presenter: LTC William C. Flinn, Jr., USAF
Interim President, Community College of the Air Force
Maxwell Air Force Base
Montgomery, Alabama 36102
(Tel. 205-273-6386)

Project Summary: The Community College of the Air Force is specifically designed to meet Air Force needs. It integrates on-duty technical education with off-duty civilian education into career relevant associate degree programs. The program is for enlisted personnel on active duty, the Air Force Reserve, and the Air National Guard. The College's associate degree programs are all designed with four main requirements:

Physical Education	4 credits
Technical Education	24-39
General Education	21
Management Education	6
	55-70 Credits

The college is fully accredited by the Southern Association of Colleges and Schools Commission on Colleges. The college has grown into one of the largest community college systems in the world with more than 155,000 registered students whose graduates are accepted for enrollment with Junior standing at numerous colleges and universities.

Funding: DoD Contract.

Information: For further information contact presenter.

IV. DEPARTMENT OF DEFENSE CIVILIAN EMPLOYEES

Overview

The majority of the DoD civilian work force is directly or indirectly involved with the readiness of the operating forces of the Armed Services. DoD civilian employees provide most of the full time support of the Reserve Forces and depot maintenance of ships, aircraft and weapons systems as well as the operations of shore based activities. They are involved in functions such as logistics, intelligence, communications, medical services, training, research, engineering, and acquisition.

Civilian employees provide technical competence and continuity. Unlike military personnel who have a variety of jobs during their career, civilian members of the DoD work in one or relatively few jobs and are able to develop specialized understanding and expertise. Because DoD civilians tend to remain in a position or, if the incumbent leaves, the job functions remain, they provide continuity and their technical competence is particularly important. Upgrading performance skills for many of the nearly one million DoD civilian employees has been a high priority. Regulations require training, supervisory personnel encourage it, and many employees seek out educational opportunities, using their own time and resources to supplement government supported training which not always available.

Insuring technical competence of civilian employees is critical to defense preparedness. The four programs described below illustrate the types of programs which can be provided by vocational education institutions.

Case Studies - DoD Civilian Employee Training

Project Title: Defense Depot, Memphis, Tennessee (DDMT) and the State Technical Institute of Memphis (STIM): Professional Development Program for Defense Depot Memphis Employees

Presenters:

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Defense Depot Memphis
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Memphis, Tennessee 38114
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State Technical Institute of Memphis
5983 Macon Cove
Memphis, Tennessee 38134
(Tel. 901-377-4207)

Project Summary: This program has been a cooperative effort between DDMT and STIM for the past five years. The program has included supervisory training, job instruction training, computer operations, mid-management training, and general job related courses. Objectives of the program have been to train, cross-train and upgrade the requisite abilities of assigned employees in the most economical and effective way. The professional development program for mid-level supervisors was presented in detail.

Funding: State and Federal funds.

Information: For further information contact presenters.

Project Title: Tinker Vocational Technical Training Program

Presenters:

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Dr. Francis Tuttle, Director
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and Technical Education
1515 W. 6th Avenue
Stillwater, Oklahoma 74074
(Tel. 405-377-2000)

Tinker AFB and the Oklahoma State Department of Vocational and Technical Education have a unique arrangement to meet the training needs of the Directorate of Maintenance. Formalized training programs are established for journeyman employees. These programs of two years in duration consist of classroom training, on-the-job training, and work experience. The first 3-6 months of the program involves training conducted through State Voc-Tech resources. Training for the remaining months is conducted in-house by OJT instructors and lead journeymen. Promotion progression is from the entry level WG-3, to the intermediate level, then to the journeyman level. Candidates for the programs are selected from both an on-base register and the off-base Office of Personnel Management register. To date, training programs have been established for 7 skills: machine tool operator, sheetmetal mechanic, hydraulic mechanic, aircraft engine repairer, aircraft mechanic, aircraft electrician, and aircraft electronics technician. During the next five years it is the intent of the Directorate of Maintenance to place 1,071 people into training programs for the above skill areas.

Because Tinker has such a large requirement, space for training was not available within the vocational technical system. In support of the Maintenance Technical Training Program, a Vocational Technical Training Center was established on-base. A Memorandum of Agreement between the State Department of Vocational and Technical Education and Tinker AFB made the State responsible for the interior construction and Tinker AFB responsible for any exterior construction of the building housing the center. The precedent setting aspect of this venture is the cooperation between and State and Federal government which allows the use of Tinker AFB property to house a voc-tech facility for training government employees.

Funding: State and Federal.

Information: For further information contact presenters.

Project Title: Red River Army Depot After-Hours Self Development Program

Presenters:

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(Tel. 214-838-2629)

Carl W. Nelson
President
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Project Summary: This session presented a method through which Red River Army Depot (RRAD) provides employees a self-development opportunity in the mechanics and electronics fields. The Depot, in cooperation with Texarkana Community College (TCC), developed two 63 semester hour training programs, a heavy equipment mechanic training program and the electronic technology program. The training is given at the depot during non-duty hours by TCC with Depot furnished facilities, equipment and tools. The college provides and pays instructors and the students pay a reduced tuition and furnish books and related materials. In instances where training is directly related to an employee's job, the Depot provides tuition support. Employees may take individual courses or complete the entire 63 semester hour program which leads to an Associate in Science Degree. These programs are providing a better supply of applicants and improving on-the-job performance of those employed in the mechanics and electronics fields.

Funding: Federal and State.

Information: For further information contact presenters.

Project Title: Puget Sound Naval Shipyard After Hours Program

Presenters:

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Dr. Henry M. Milander
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Bremerton, Washington 98310
(Tel. 206-478-4545)

Project Summary: The Puget Sound Shipyard in conjunction with Olympic Community College has provided a comprehensive after-hours, off-duty time self-development program for the past 31 years. The shipyard provides facilities and equipment and pays student tuition fees. The college provides certified college/vocational instructors and accrediation towards an Associate in Technical Arts Degree. The courses include remedial mathematics and English, supervision and management, engineering, and a wide variety of vocational trades such as blueprint reading or computer programming. This relationship has provided better qualified applicants, upward mobility opportunity, and a higher skill level among participating employees.

Funding: Federal and State.

Information: For further information contact presenters.

V. DEPARTMENT OF DEFENSE RESERVE MILITARY FORCES

Overview

Collaborative efforts between vocational education and the reserve military can be productive for both. Specific job skill training of reservists improves the readinesss of reserve units. Since the civilian occupations of reservists are likely to parallel their military occupations, the reservists' civilian job skills may be increased, the local industrial base enhanced, and the economy of the community furthered.

Reserve unit readiness is a function of both equipment and trained personnel. Some of the newer systems that the services are now using or expect to use in the future require considerable technical sophistication by system operators or users. As the reserve forces begin to use these systems, the problem of the active forces in maintaining highly trained soldiers to work on complex equipment will be repeated in the reserve forces.

The missions of units in the reserve forces vary. For example, a large percentage of reserve units are <u>combat support</u> units while a larger percentage of guard units are <u>combat</u> units. Guard and reserve units rely heavily on being able to attract already trained personnel to the unit. Units can send personnel to formal military schools for the requisite skills training. At issue is the fact that the number of reserve training spaces and funds to pay the guard or reservist while attending school are limited. In addition, some military schools last three or more months and reserve personnel may be reluctant to leave a job or family for those periods of time.

Vocational education schools are an important alternative to military training. Contracts with vocational education schools for training are affected by several requirements. First, the curriculum must be related to the military occupation and the training objectives need to be clearly defined. Next, the vocational curricula may need to be tailored to fit the military setting.

Class location and cost are other factors which must be considered. Locating classes close to the unit site facilities allows close contact between the unit and the school. The unit commander is better able to supervise unit personnel as well as evaluate the instruction. Because the objective of contracting with vocational education schools for technical training is to obtain the best training possible at the least cost, the costs for the training must not exceed the costs of similar training for civilians.

There are many examples of collaborative efforts between vocational education and the reserve military forces which could be cited. Those described below include an example of a unit receiving training from a vocational education school and providing additional job skill training for vocational education students. The Alabama State Community College system sponsors a licensed practical nurse (LPN) program which Army National Guard personnel have attended at eight sites throughout the state. Hanna Harrison Career School of Nursing in Washington, D.C. provides LPN training for an Army Reserve unit through a contract. Lastly, the New Jersey Department of Education was able to provide training on emissions standards for Air National Guard members. The abstracts of these programs follow.

Case Studies - DoD Reserve Military Forces

Project Title: Air National Guard Training of Motor Vehicle Maintenance Personnel in Emission Systems Diagnosis

Presenters:

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(Tel. 609-292-6325)

LTC John H. Williams
Deputy Commander, Maintenance
National Guard Bureau
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Absecon, New Jersey 08201
(Tel. 609-646-2412)

Project Summary: The program has grown out of an existing cooperative relationship between the Air National Guard and the New Jersey Department of Education. In the summer of 1982 full time Guardsmen were trained in the area of ground vehicle maintenance at Pomona Air Force Base in Pomona, New Jersey. Training costs for the Guard were low as the State provided the course instructor. The State Department of Education considers this program successful and hopes to include the Army National Guard in similar activities in the future.

Funding: The State pays the salary of the course instructor.

Information: For further information, contact either LTC John H. Williams (see above) or

Dick Van Gulik
Director, Trade and Industrial Education
Vocational Division
CN500
Trenton, New Jersey 08625
(Tel 609-292-6570)

Wes Pfeiffer
Supervisor, Trade and Industrial Education
Vocational Division
CN500
Trenton, New Jersey 08625
(Tel 609-292-6565)

Project Title: The Marine Corps Reserve Contract Civilian MOS Training Support Program

Presenters:

Mr. Ronald Torp
Director of Career Training Center
Career Training Center
1010 S. Gratiot
Mt. Clemens, Michigan 48043
(Tel. 313-468-9685)

MAJ Dennis Verzera, USMC
Executive Officer
Marine Wing Support Group--47
Naval Air Facility
Selfridge AFB
Detroit, Michigan 48045
(Tel. 313-949-5456)

Project Summary: The Career Training Center in Mt. Clemens, Michigan provides MOS related vocational education training under contract with a Marine Corps Reserve Unit in Detroit, Michigan. The vocational curriculum is customized to contribute directly to the reservist's ability to perform duties required by his billet. Recent courses provided under contract are Diesel Mechanics and Electrical Repair Training.

Funding: U.S. Marine Corps Reserve Contract.

Information: For further information contact presenters listed above.

Project Title: Army National Guard Medical Personnel Training

Presenters:

Wayne B. Boteler
Dean of Students
Shelton State Technical College
Tuscaloosa, Alabama 55404
(Tel. 205-556-1144)

COL Richard J. Sims, ARNG
Chief of Plans, Operations & Training
Alabama National Guard
Montgomery, Alabama 36036
(Tel. 205-584-7743)

Project Summary: The Shelton State Technical College and the Alabama Community Colleges provide Licensed Practical Nurse (LPN) training under contract with the Alabama National Guard to train 91C medical personnel for the Guard units. Guard personnel are put on active duty for the period of training. In-depth training and clinical experiences are provided in a wide range of medical, nursing, and allied health skills. Graduates of the accredited LPN Program take the State Board Exams and become Licensed Practical Nurses.

Funding: Alabama National Guard Contract.

Information: For further information contact presenters listed above.

Project Title: U.S. Army Reserve Medical Training for Licensed Practical Nursing

Presenters:

Jane Town
Director of Practical Nurse Program
Hanna Harrison Career School of Nursing
4470 McArthur Blvd.
Washington, D.C. 20007
(Tel 202-333-3500)

Anne K. Milkes
Executive Director
Hanna Harrison Career School of Nursing
4470 McArthur Blvd.
Washington, D.C 20007
(Tel. 202-333-3500)

COL Julius D. Pantalome, USA
First Army Medical Advisor
Ft. Meade, Maryland 20755
(Tel. 301-923-3024)

Project Summary: The Hanna Harrison Career School of Nursing provides Licensed Practical Nurse (LPN) training under contract with the 2290th Army Reserve Unit to train 91C medical personnel for the unit. Reserve personnel are put on active duty for the period of training. In-depth training and clinical experiences are provided in a wide range of medical, nursing and allied health skills. Graduates of the accredited LPN Program take the State Board Exams and become Licensed Practical Nurses.

Funding: Army Reserve Contract.

Information: For further information contact presenters listed above.

VI. DEPARTMENT OF DEFENSE MILITARY ACCESSIONS

Overview

The recruiting objective for the DoD is to recruit the quantity and quality of people needed to staff the force. Recruiting objectives are also established for each category of personnel: males, females, prior service, and non-prior service. Certain minimums regarding proportion of non high school graduates are also specified.

In fiscal year 1981, the services achieved 101% of their recruiting goals. Data on the number of high school graduates entering the service indicate that all services recruited a higher proportion of high school graduates than were found in the national youth population. Continued availability of trained or trainable personnel (such as high school graduates) is critical to defense preparedness and efforts to modernize weapons systems, such as force modernization, are affected. A central problem of force modernization is that increasingly complex systems require increasingly greater numbers of technically sophisticated, highly trained personnel. Although high school graduates have the potential to be trained and to contribute to force modernization, if the services could attract individuals who already have technical training, the task of force modernization would be simplified.

One important contribution vocational education can make to military training and defense preparedness is to assist in identification and recruitment of technically trained, high school graduates. Vocational education instructors can work with active duty and reserve/national guard recruiters to provide students information on job and career opportunities in the DoD. One way of providing information is for schools to schedule recruiters' visits during the year and during special events such as career day. Another method involves organizing and disseminating information to students or counselors via handbooks or guides. These coordination efforts would be facilitated by clear, documented military and civilain occupational information. Project Crosswalk, described in one of the following abstracts, will produce a guide linking occupational information between both.

In some career areas, experimental programs exist to test the feasibility of a lateral entry program to award civilian technical school/program graduates rank. One aspect of the Navy experiment involves a job skill test which tests prospective service members' grasp of non-military technical material. Applicants who score well on the test are allowed to enter the Navy in pay grades 4 through 6 (these grades usually are attained only after four or more years of service). This program is summarized in the abstracts which follow.

Some individuals who enter the service do not have the basic reading and mathematical skills needed to do well in technical training. As mentioned previously, basic skills training is another area in which opportunities for cooperation between the DoD and the vocational education community exist. The Army Basic Skills Education Program (BSEP) is also planned to help service members improve skills in reading, writing, mathematics, and speaking. The

program is administered Army-wide but actual services are handled locally and delivered through community colleges and local education agencies on a contractual basis.

Case Studies: Military Accessions

Project Title: Department of Defense Military Accessions - Needs Assessment

Presenter: Dr. W. S. Sellman
Deputy Director for Accession Policy
Office of Assistant Secretary of Defense
Manpower, Reserve Affairs and Logistics
The Pentagon, Room 2B271
Washington, D.C. 20301
(Tel. 202-695-5525)

Project Summary: Each year, the Armed Services need to sign up or "hire" approximately 575,000 people: 25,000 officers, 350,000 enlistees for the Active Force and an additional 200,000 people for the Reserves. When the statutory authority for the draft expired in 1973, the United States ended over 30 years of almost continuous compulsory military service. With the advent of the all-volunteer force, the focus of military personnel planners shifted from retaining trained personnel to enlisting qualified youth. Today the principal market for military recruiting activities is the high school graduate. For enlisted personnel purposes, DoD studies consistently have demonstrated that high school graduates are more likely to successfully complete their term of enlistment than are nongraduates. High school graduate enlistees have an 80 percent completion of tour record compared to 60 percent for nongraduates. In addition, those studies have shown that high school graduates are more likely to reenlist and to advance in rank. To date, the Armed Services continue to meet all volunteer force recruiting objectives and quotas, but DoD must compete in the civilian employment and educational markets for these youth, and it is to be noted that while the supply of quality recruits is going down the demand is going up. The major question is how do these two factors come together. The vocational education training community can play a major role in helping to alleviate this disparity.

Questions to be answered by the Recruiting Services and the vocational/technical institutions include: (1) what must be done to improve recruiting practices in vocational education schools so that they will be approached with the same level of sophistication that is demonstrated in high schools and colleges? (2) who should do this recruiting? (3) what additional assets would be required to effectively recruit vocationally trained students? (4) what policies or code of ethics should be developed by the military and vocational educator to establish the ground rules for recruiting?

Decisions must be made by the military as to what concessions or advantages they are willing to offer graduates of vocational training courses similar to the advanced pay grades offered for college credit.

Funding: Federal.

Information: For further information contact presenter.

Project Title: Project Crosswalk: Linking Military and Civilian Occupational Information

Presenter: Dr. Anita Lancaster
Program Manager
Directorate for Accession Policy
Office of Assistant Secretary of Defense
Manpower, Reserve Affairs and Logistics
The Pentagon, Room 2B269
Washington, D.C. 20301
(Tel. 202-697-9267)

Project Summary: The purpose of this project is to develop a system that will provide a macro level data base to aid in manpower strategy planning; demand and supply career information; training and job opportunities from school, State and military sources; and critical skills identification for mobilization planning. The first step in developing the system was the need to design and implement a "cross-walk" between military occupations data and the data of existing civilian occupational classification systems. Accomplishment of the objective centers on the development of a master occupational speciality computer data tape that cross references all military occupational specialities of the Army, Navy, Air Force, Marine Corps, and Coast Guard with the civilian occupational specialties and 9-digit codes found in the Dictionary of Occupational Titles (DOT). The development of the Military-Civilian Occupational Information Crosswalk master tape will be the basis from which the military occupational specialty package and the Military-Civilian Occupational Source Book will be developed.

Funding: DoD.

Information: For further information contact presenter listed above.

Project Title: DoD/Department of Education Joint Research and Development Project Pre-Vocational Instruction for Lower Aptitude Navy Recruits

Presenters: Dr. Ed Aiken
Program Director
Career Development and Retention
Navy Personnel Research and Development Center, Code 15
San Diego, California 92152
(Tel. 714-225-2371)

Project Summary: The Navy, like the other services, uses a battery of aptitude and achievement tests to set qualification standards for entry into its technical training schools. However when career manpower shortfalls occur, recruits are given waivers from these test score requirements. Job oriented basic skills training (JOBS) was to be tried on recruits who tested below the maximum waivered limit for school entry. They were to be recruits who, all else being equal, would be predicted to fail Navy vocational technical training in large numbers.

The specific aim of JOBS was to provide pretechnical training on those knowledges and skills which a curriculum analysis indicated were prerequisite to the technical training provided in selected Navy schools. Since there were a larger number of prerequisites than time in which to to teach them, classifiers selected only those where very large differences between JOBS and school qualified recruits were found. The teaching time allotted was driven by the projected benefits. In other words, the dollars saved had to clear the costs of the training. For purposes of the research, that was predicted to be in the range of 4-8 weeks per course.

What were the results to be discerned from the data and analyses performed to date on the JOBS project test and evaluation? First, it would seem that DoD could, with a modest investment in carefully targeted prevocational training, get a good deal more skilled performance out of some of its lower aptitude recruits than it does at present. As a bonus, the data indicate that after they are trained, the JOBS type student shows a higher degree of institutional loyalty. Also, because JOBS students are over-represented by Amercia's racial and ethnic minorities, getting them into skilled labor categories contributes to the goal of distributing minority personnel more evenly across the vocational and technical occupations found in the Navy. On the other hand, it can be argued that in today's very favorable recruiting market, compensatory training programs like JOBS should not be over emphasized. It was particularly noted that there may still be a cost-effective place for upward mobility programs like JOBS.

Funding: Federal.

Information: For further information contact presenter.

Project Title: Laternal Entry Pilot Study: Issues for Defense and Vocational/Technical Education

Presenters:

Mr. Eugene Sullivan
Assistant Director
Office of Educational Credits and Credentials
American Council on Education
1 Dupont Circle
Washington, D.C. 20036
(Tel. 202-833-4686)

Dr. Meryl Baker
Supervisory Personnel Research Psychologist
Navy Personnel Research and Development Center, Code 15
San Diego, California 92152
(Tel. 714-225-6911)

Mr. Leon Albert
Director of Evening College
Stark Technical College
Canton, Ohio 44770
(Tel. 216-494-6170)

Project Summary: The Navy Personnel Research and Development Center (NPRDC) is investigating various methods to address the Navy's current and projected shortage of skilled personnel. One such method for increasing both the quality and quantity of such personnel is through the use of lateral entry accessions. Lateral entry means accession into an organization at some point beyond the

typical beginning or entry point. Such lateral entry is normally based upon some measurable competencies or experience gained by an individual in the labor market, or, on the training or educational achievement of an individual at a vocational school, technical school or university. Lateral entry into the Navy involves accessing individuals without prior military service at higher pay-grades than is normally available to such personnel. As part of NPRDC's investigation of the feasibility of lateral entry, a pilot program was established in 13 ratings for the purposes of validating newly established lateral entry standards and investigating targets. The 13 ratings were: Aviation Electrician's Mate (AE); Aviation Electronics Technician (AT); Electrician's Mate (EM); Machinist's Mate (MM); Storekeeper (SK); Engineman (EN); Hull Technician (HT); Instrumentman (IM); Mess Specialist (MS); Yeoman (YN); Fire Control Technician (FT); Electronics Technician (ET); Machinery Repairman (MR).

Funding: Department of the Navy.

Information: For further information contact presenters.

VII. CONCLUSIONS

Summary Conclusions and Recommendations Made by Presenters

During the last session of the seminar, representatives from each of the five panels, including Defense Related Industrial Base, DoD Active Military Forces, DoD Civilian Employees, DoD Reserve Military Forces and DoD Military Accessions, summarized key points presented during the meetings and outlined future directions. Summaries of the presentations are found below.

Defense Industrial Base

The four projects presented were summarized and four factors common to those successful projects were noted. The four factors were: 1) communication does take place between the educational community and industry; 2) the projects exemplified a commitment to funding and getting the job done; 3) mutual trust is a key ingredient to cooperative efforts; and 4) the potential for educational assistance is clear.

DoD Active Military Forces

The four demonstration projects presented during the seminar were described and the Active Forces representative made two observations. First, the mechanisms which would permit cooperative efforts already exist and are in place. Second, the needs of the services are tied directly to their primary missions; and because the missions of each differ and the specific, local needs of any command within a service may differ, cooperative efforts must be identified and implemented at a local level.

The following conclusions were stated. First, military participants felt the program was worthwhile and appropriate distribution of seminar proceedings would be useful. Second, although the services generally meet their training needs now, opportunities exist for collaborative efforts. Third, the services' need for basic or remedial skills (i.e., literacy) training has and can continue to be augmented from outside sources. Lastly, efforts of units to modernize may result in previously unidentified technical training requirements.

DoD Civilian Employees

Several recommendations were made during the session. They were, first, initiate formal exchanges of information at the regional level. Second, foster both formal and informal efforts to share materials, tools, and training. Next, identify DoD-Voc Ed contact points and establish a mechanism to accomplish recommendations. Lastly, the American Vocational Association should include a session on defense preparedness at their next meeting and at the next state directors' meeting.

DoD Reserve Forces

The projects presented during the seminar were briefly reviewed. Seven critical elements necessary for joint vocational education reserve activities were cited. These were communication, commitment, trust, understanding, assistance, cooperation, and flexibility. No specific recommendations were made.

DoD Military Accessions

Some recommendations were made and some questions were posed. The recommendations were: (1) maintain a "can do" attitude; (2) develop a DoD-Voc Ed directory of key decision makers; (3) continue the dialogue between policy makers, researchers, and practioners; and (4) support the Lateral Entry Accessession and Crosswalk programs.

The questions to be answered were: (1) How can recruiting at facilities with vocational educational programs be facilitated? (2) What information is needed in order for the services to be more effective in recruiting vocational education graduates? (3) What policies are needed to carry out the recruiting effort? and (4) What technical training alternatives exist for active duty personnel?

Other Roles for Vocational Education

Collaboration

Although no additional funds are or will become available for vocational training as a result of these initiatives, vocational directors can be proactive in seeking out opportunities for collaboration. Because contracting authority for local training has been delegated to local military installation commanders, educators must ascertain what local training needs are in order to develop programs and proposals for funding. One example of outstanding collaboration with industry was reported in Orange County, California. There, the community colleges were able to contract for specific training with Air California, Farwest Industries, General Motors, Hughes Aircraft, and ITT Cannon. Some 2,600 employees received apprenticeship training on a contractual basis with those colleges. Other examples of collaborative efforts were illustrated in the text of this report.

Outreach

Many vocational institutions have developed an effective outreach capability. Essentially, this enables an educational institution to send an instructor to a military base, reserve center, industry, etc. to conduct the training where the students are located. This activity occurs within many existing adult and vocational programs but can be strengthened and expanded.

Greater Use of Facilities and Resources

Annually new vocational facilities are constructed, equipment and films purchased, and curricula guides prepared. Opportunities abound to increase their usage not only within the vocational education community, but also for a number of defense oriented corporations and agencies. The potential exists for scheduling programs during evenings, weekends, or even summers for personnel unable to participate in daytime training. One example indicating how vocational facilities could be used on weekends was reported in Maine. The state education agency, in that instance, was instrumental in developing linkages between the Army National Guard and a vocational school. Approximately 500 personnel from an engineer battalion participated in construction training during weekend scheduled training assemblies. The National Guard benefitted from this cooperative endeavor as did the vocational school, instructors, and the community at large.

Participant Feedback

Seminar participants were requested to complete a two-part, open-ended questionnaire at the conclusion of the conference. Ninety-one questionnaires were returned representing a 31% rate of return. Of the ninety-one, approximately 29% (26) were submitted by attendees from the military sector. The remaining number, approximately 71% (65), represented attendees from the civilian sector.

A number of suggestions were made in the questionnaire's comment section. These responses fell into two general categories: (1) those that were concerned with the conduct of the Seminar and (2) the remainder which addressed broad generalizations, specific ideas, or activities.

The most frequent comments about the Seminar concerned "ready availability" of the proceedings and "obtaining a list" of participants. Broad-scale publicity about the Seminar and the suggestion "to conduct a national conference annually" were the second most frequently mentioned ideas. Several respondents recommended that a survey of participants be conducted within six months for the purpose of determining follow-up activities or actions that could be attributed to the Seminar.

Suggested follow-up activities fell into four categories. The first, Federal leadership and coordination, concerned actions that need to be taken by the Departments of Education and Defense. One suggestion was to create a Federal level "Task Force" or "Coordinating Committee" to provide leadership and coordination. The need for "reliable information" and "easily accessible" data on skill shortage military needs were also frequently mentioned.

The second group of suggestions was specifically directed to information exchange. Some urged that stronger communication lines between the military, civilian and defense industrial bases be established. Better ways to exchange information were suggested. These included establishment and distribution of (1) a directory of education personnel, schools, and resources; (2) a directory of military personnel, military installations and other resources; and, (3) a newsletter.

Suggestions were also made regarding recruitment ideas and procedures. These comments generally concerned new ways for the military services to work with the vocational education community. Specifically mentioned were the following: (1) lateral-entry based upon technical training credit, (2) pre-induction support based on future involvement with the military, and, (3) comprehensive career development that includes an emphasis on the K-12 level and on counselor training.

Still another category of suggestions concerned the specific recommendation to work with advisory councils. Suggestions ranged from adding a military representative to the National Advisory Council on Vocational Education (NACVE) to the establishment of special military/education advisory councils at the state level.

APPENDIX A

SEMINAR AGENDA

AGENDA

Wednesday, September 29, 1982

OPENING RECEPTION 6:00 - 6:45 PM

PRESENTATION OF THE COLORS 7:00 - 7:15 PM

Color Guard - Military District of Washington, DC

DINNER 7:15 - 8:30 PM

KEYNOTE ADDRESS: 8:30 - 9:15 PM

WELCOME : The Honorable Robert M. Worthington

INTRODUCTION : The Honorable Lawrence J. Korb

KEYNOTE SPEAKER: The Honorable Frank Carlucci

Thursday, September 30, 1982

GENERAL SESSION 8:00 - 9:00 AM

CHAIR : The Honorable Robert M. Worthington

OPENING REMARKS: The Honorable T.H. Bell

PRESENTATION : CAPABILITIES OF THE VOCATIONAL EDUCATION COMMUNITY
Dr. Gene Bottoms

PANEL SESSIONS

SESSION I - NEEDS ASSESSMENT 9:15 - 10:30 AM

A. Defense Related Industrial Base

MODERATOR : Hugh Bradley

PRESENTERS: Richard Donnelly, David L. Blond, Paul F. Pothin

RECORDER : George Saunders

B. DoD Active Military Forces

MODERATOR : COL William A. Scott, USA

PRESENTERS: LTC Clinton L. Anderson, USA, CAPT Douglas H. Sommer, USN, William S. Neal, USAF, MAJ Donald C. Sheehan, USMCR

RECORDER : Dr. Glenn C. Boerrigter

C. DoD Civilian Employees

MODERATOR : Richard J. Schnurr

PRESENTERS: John Hartigan, Joseph Moore, Luke McDaniel

RECORDER : Dr. Carroll F. Towey

D. DoD Reserve Military Forces

MODERATOR : COL Lloyd Johnson, USAF

PRESENTERS: MGEN Herbert R. Temple, ARNG, MAJ Donald Sheehan, USMCR, COL Wilbert T. Stewart, ANG, COL William J. Lumpkins, USAR

RECORDER : Donald H. Snodgrass

E. DoD Military Accessions

MODERATOR : Dr. W.S. Sellman

PRESENTER : Dr. W.S. Sellman

RECORDER : Dr. Paul Manchak

COFFEE BREAK 10:30 - 10:45 AM

SESSION II - CASE STUDIES

A. Defense Related Industrial Base

PROJECT TITLE - Improving Skills of Tradesmen in Shipbuilding Industry

MODERATOR : Hugh Bradley

PRESENTERS: Travis Cliett, Mickey Davenport

PANELISTS : William A. Edward, Dave Meyer

RECORDER : George Sanders

B. DoD Active Military Forces

PROJECT TITLE - Military Readiness: Education and Vocational Training at Fort Bragg, North Carolina

MODERATOR : COL George Bailey, USA

PRESENTERS: Raymond E. Gatti, Dr. William A. Edmundson

PANELISTS : MSG Kenneth L. Nelson, USA, William Reilly

RECORDERS : Louise Ellis, Dr. Glenn C. Boerrigter

C. DoD Civilian Employees

PROJECT TITLE - Puget Sound Naval Shipyard After-Hours Program

MODERATOR : Luke McDaniel

PRESENTERS: Duane K. Carlton, Roderick McIntyre

PANELISTS : Richard A. Hines, Walter Wimer

RECORDER : Dr. Carroll F. Towey

D. DoD Reserve Military Forces

PROJECT TITLE - Army National Guard Medical Personnel Training

MODERATOR : COL Ed Remiszewski, ARNG

PRESENTERS: Wayne B. Boteler, COL Richard J. Sims, ARNG

PANELISTS : LTC Erwin F. Clements, ARNG, Dr. Elwood Padham

RECORDER : Donald H. Snodgrass

E. DoD Military Accessions

PROJECT TITLE - DoD/Department of Education Joint Research and Development Project Pre-Vocational Instruction for Lower Aptitude Navy Recruits

MODERATOR : Dr. W.S. Sellman

PRESENTERS: Dr. Ed Aiken

PANELISTS : LCDR Kathleen O'Brien, Dr. Donald M. Brill

RECORDER : Dr. Paul Manchak

LUNCH 12:15 - 1:30 PM

SESSION III - CASE STUDIES

A. Defense Related Industrial Base

PROJECT TITLE - Rockwell International Project

MODERATOR : Hugh Bradley

PRESENTERS: Jack Ellis, Dave Meyer

PANELISTS : Elwin G. Wheat, Mickey Davenport

RECORDER : George Sanders

B. DoD Active Military Forces

PROJECT TITLE - Job Oriented Basic Skills Training in the U.S. Navy

-Navy Technical Training Center, Meridian, MS
-Early Research for the JOBS Program
-Naval Aviation Technical Training Center, Memphis, TN

MODERATOR : LCDR Kathleen O'Brien

PRESENTERS: K. Irby, Dr. E.G. Aiken, D. Fiene, Dr. N.N. Kerr

PANELISTS : CDR W. Losa, USN, Walter E. Muller

RECORDERS : CDR D. Seykowski, USN, Dr. Glenn C. Boerrigter

C. DoD Civilian Employees

PROJECT TITLE - Red River Army Depot After-Hours Self Development Program

MODERATOR : Luke McDaniel

PRESENTERS: David Mueller, Dr. Michael Johnson, William Goff

PANELISTS : Jacqueline J. Cody, Dr. William A. Grusy

RECORDER : Dr. Carroll F. Towey

D. DoD Reserve Military Forces

PROJECT TITLE - U.S. Army Reserve Medical Training for Licensed Practical Nursing

MODERATOR : MAJ Bruce W. Morrow, USAR

PRESENTERS: Jane Town, Anne K. Milkes, COL Julius D. Pantalone, USA

PANELISTS : LTC Jeanette D. Kraska, USA, Dr. David S. Gailey

RECORDER : Donald Snodgrass

E. DoD Military Accessions

PROJECT TITLE - Lateral Entry Pilot Study: Issues for Defense and Vocational/Technical Education

MODERATOR : Dr. Anita Lancaster

PRESENTERS: Eugene Sullivan, Dr. Meryl Baker, Leon Albert

PANELISTS : MAJ James E. Watson, USAF, Kenneth Swatt

RECORDER : Dr. Paul Manchak

COFFEE BREAK 2:45 - 3:00 PM

SESSION IV - CASE STUDIES

A. Defense Related Industrial Base

PROJECT TITLE - Pratt and Whitney Program

MODERATOR : Hugh Bradley

PRESENTERS: Dr. Elwood A. Padham, Dana Darling, John M. Lyman

PANELISTS : D. Massengale, William Harnett

RECORDER : George Sanders

B. DoD Active Military Forces

PROJECT TITLE - Community College of the Air Force

MODERATOR : LTC Bobby P. Tindell, USAF

PRESENTERS: LTC William C. Flinn, Jr., USAF

PANELISTS : MAJ Douglas E. Testermen, USAF

RECORDER : CPT Richard G. Howson, USAF, Dr. Glenn C. Boerrigter

C. DoD Civilian Employees

PROJECT TITLE - Tinker Air Force Base Vocational Technical Training Program

MODERATOR : Luke McDaniel

PRESENTERS: John V. Provence, Jacqueline J. Cody, Dr. Francis Tuttle

PANELISTS : William Goff, Clarence M. Green

RECORDER : Dr. Carroll F. Towey

D. DoD Reserve Military Forces

PROJECT TITLE - U.S. Marine Corps Reserve-Diesel Mechanic/Electrical Repair Training program, Mt. Clemens, Michigan

MODERATOR : LTC Regan Wright, USMC

PRESENTERS: Mr. Ronald Torp, MAJ Dennis Verzera, USMC

PANELISTS : MAJ Paul Farmer, USMC, Dennis E. Davis

RECORDERS : CPT Robin L. Higgins, USMC, Donald H. Snodgrass

E. DoD Military Accessions

PROJECT TITLE - Project Crosswalk: Linking Military and Civilian Occupational Information

MODERATOR : Dr. W.S. Sellman

PRESENTERS: Dr. Anita Lancaster

PANELISTS : L.A. Roberton, Russell B. Flanders

RECORDER : Dr. Paul Manchak

BREAK 4:15 - 4:30 PM

SESSION V - CASE STUDIES

A: Defense Related Industrial Base

PROJECT TITLE - Bendix Corporation Program

MODERATOR : Hugh Bradley

PRESENTERS: Jessie Burt, William Harnett

PANELISTS : Dr. Francis Tuttle, Ed Word, Dana Darling

RECORDER : George Sanders

B. DOD Active Military Forces

PROJECT TITLE - U.S. Marine Corps AC-Delco Corporation; Technical Training Program

MODERATOR : LTC Regan A. Wright, USMC

PRESENTERS: Milton Weatherhead, LTC Peter B. Southmayd, USMC

PANELISTS : LTC Jack W. Carter, USMC

RECORDER : Dr. Glenn C. Boerrigter

C. DoD Civilian Employees

PROJECT TITLE - Professional Development Program for Defense Depot Memphis Employees

MODERATOR : Luke McDaniel

PRESENTERS: Carol McAuliffe, Richard A. Hines

PANELIST : Dr. J. Richard Gilliland

RECORDER : Dr. Carroll F. Towey

D. DoD Reserve Military Forces

PROJECT TITLE - Air National Guard Training of Motor Vehicle Maintenance Personnel in Emission Systems Diagnosis

MODERATOR : COL Bruce R. LaForce, USAF

PRESENTERS: Leon J. Colavita, LTC John Williams

PANELISTS : COL Wilbert T. Steward, ANG, William Reilly

RECORDER : Donald H. Snodgrass

E. DoD Military Accessions

PROJECT TITLE - Lateral Entry Pilot Study: Issues for Defense and Vocational/Technical Education

MODERATOR : Dr. Anita Lancaster

PRESENTERS: Eugene Sullivan, Dr. Meryl Baker, Leon Albert

PANELISTS : MAJ James E. Watson, USAF, Kenneth Swatt

RECORDER : Dr. Paul Manchak

EVENING SESSION 6:00 - 6:45 PM

RECEPTION

DINNER 7:00 - 8:00 PM

REMARKS: The Honorable Lawrence J. Korb,
The Honorable Robert M. Worthington

Friday, October 1, 1982

GENERAL SESSION 8:30 - 10:30 AM

THE ORANGE COUNTY TECHNOLOGY RESOURCE CENTER: A UNIQUE PUBLIC-PRIVATE SKILLS TRAINING ENTERPRISE

CHAIR : The Honorable Robert M. Worthington

PRESENTERS: Kathy Lusk, COL James F. Young, USAF, William B. Turner

COFFEE BREAK 10:30 - 10:45 AM

PANEL REPORTS 10:45 - 12:30 PM

PRESENTATION AND DISCUSSION OF SUMMARY CONCLUSIONS AND RECOMMENDATIONS

CHAIR : The Honorable Robert M. Worthington,
The Honorable Lawrence J. Korb

CLOSING REMARKS, LUNCH 12:30 - 1:30 PM

APPENDIX B

LISTING OF PARTICIPANTS, PRESENTERS, AND PLANNING COMMITTEE
AT THE
VOCATIONAL EDUCATION AND DEFENSE PREPAREDNESS SEMINAR

Ray Adcock
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Program Director
Navy Pers. R&D Ctr. Code 15
San Diego, CA 92152
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Director of Evening College
Stark Technical College
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Canton, OH 44720
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LTC Clinton L. Anderson, USA
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The Adjutant General's Office
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APPENDIX C

REMARKS BY THE HONORABLE FRANK C. CARLUCCI

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U.S. DEPARTMENT OF DEFENSE

REMARKS BY THE DEPUTY SECRETARY OF DEFENSE
TO THE
SEMINAR ON VOCATIONAL EDUCATION AND DEFENSE PREPAREDNESS

29 SEPTEMBER 1982

I am delighted to have the opportunity to join you this evening to discuss the important role of vocational education in maintaining our nation's defenses. I am gratified and encouraged that representatives from government, industry, and education have all come together to examine how America can muster its tremendous human potential to meet the challenges of our modern technological world. You are addressing one of the most important and difficult problems facing our nation's security today.

Too often debates about national security revolve around strategic issues or military hardware. They miss the most important variable in the national security equation -- people. Lessons learned in the recent conflicts in the Middle East and the South Atlantic -- as well as on battlefields down through history -- all teach us that human rather than material factors provide the margin of victory.

Occasionally when a representative from the Defense Department testifies in Congress about the requirements of the Defense program, some Congressman will ask him if he would trade places with his counterpart in the Soviet Union. The answer is always no. But not because we do not envy the material resources available to our Soviet counterparts. For the Soviets have invested enormous sums to provide their military with a large force equipped with increasingly sophisticated weapons. But the Soviet Union cannot come close to matching the motivation, intelligence, and initiative of the men and women in the ranks of our Armed Forces and the dedicated civilians working for our Defense Department. Of that every American can be justly proud.

Unfortunately in the 1970s America tended to take our manpower advantage over the Soviet Union for granted. By failing to compensate adequately our servicemen and women and to offer them the dignity and quality of life that they deserve, we allowed the foundation of the all volunteer force to crumble. We were unable to recruit sufficient numbers of top quality people; our re-enlistment rates plummeted as military personnel left the service at the end of their obligated tours. Morale in our units worldwide was at a low ebb.

As part of President Reagan's pledge to restore America's defenses, he gave first priority to correcting those deplorable personnel conditions. A large part of the increase in the Defense budget that we received last year was used to raise salaries by 14.3%, pay re-enlistment bonuses and improve the quality of life for the military.

We see clear evidence that our quick corrective measures are working. The members of the Armed Forces -- and the youth of America -- quickly recognized that dignity had been restored to military service and that we were sincere about compensating them adequately for their work and sacrifices. Then the quality and educational levels of our recruits rose, ... then our junior officers and enlisted personnel began remaining beyond their initial terms, ... then the morale, discipline, and harmony in our units and on our ships surged dramatically.

In the past nine months the Armed Services have not only recruited 103% of their objectives, but they also have been able to obtain better educated young Americans. In the last full fiscal year before President Reagan took office, only 68% of our recruits had high school diplomas; now 82% are graduates. That additional 14% provides the essential margin of vitally needed skilled manpower to operate and maintain our modern equipment. That means our military gear will work better and break down less frequently.

Pay increases, re-enlistment bonuses, and other benefits have also helped us to retain the services of our experienced personnel after their terms of service expire. Two years ago the re-enlistment rate was 55%; for the past nine months it has been 72%. That means that we save on training time and costs for replacements. Higher retention rates also mean that we have more experienced and mature leaders to guide our young recruits. That should be particularly heartening to all Americans with sons and daughters in the military today.

The Soviet Union is far less concerned about recruiting, pay and quality of life, or retention. While we spend 51% of our Defense budget for personnel, only about 15% of the Soviet defense budget is allocated for personnel costs. About 75% of the Soviet Armed Forces are conscripts, pay is extremely low and living conditions are abysmal. It is no surprise that the re-enlistment rate of the conscripts is less than 2% and the Soviets have only a 25% career force of mostly officers.

On the other hand, the Soviet Armed Forces outnumber us by a ratio of 2 to 1. We have tried to counterbalance that by providing our Armed Forces with more advanced equipment. Technology can be a great force multiplier.

For example, today there are fewer soldiers in the Army for each combat division than at any time since before World War II; but today's division has ten times the firepower of a World War II division. Our Navy is building ships which are not only more powerful than their predecessors, but far more efficient. New anti-missile cruisers have highly sophisticated weapons of far greater range and much improved reliability; and they are manned by a crew of 319 while the cruisers they replace had crews of 1600.

For the Air Force, the leverage on manpower efficiency provided by its modern aircraft and ordnance is equally impressive. During August 1944, as allied forces broke out of Normandy, 3000 heavy bombers of the 8th Air Force flew more than 18,000 sorties. Something like 30,000 aircrew members were required for this effort. Today, 800 F-16 fighters, manned by just 800 pilots, could deliver the same tonnage of bombs over comparable distances, but much more accurately.

The Soviets also recognize the tremendous military advantages of modern technology and have embarked on a vigorous modernization effort. In some cases they have already begun to supplement their quantitative superiority over us with a qualitative edge. Our great concern is that the United States must be able to maintain its technological lead -- and that is a problem that we in the Defense Department cannot solve alone.

We need the help of the education community and industry to correct the nationwide technical illiteracy that is weakening our defenses. Even the most well designed and cost effective weapons system program is useless without skilled craftsmen building sophisticated military equipment in our factories, ... without a military trained to operate complex modern gear,.... and without technically qualified personnel to keep our equipment in good repair. Meeting those needs will not be easy. Therein lies the challenge for this seminar.

For years our lead in technology and productivity was unchallenged. That is no longer the case. While other nations embarked on crash programs to harvest the fruits of modern technology, the priorities of American society shifted elsewhere. A recent statement by a Japanese economist illustrates my point:

> "You in the United States have in the last ten years doubled the number of people in law schools, while you barely even maintained the number of people in engineering schools. We in Japan have not increased the number of lawers, but have doubled the number of engineering students. Lawyers are concerned with dividing the pie, engineers with making it larger."

He is right. U.S. patents issued to foreign nationals grew from 17% of the total U.S. patents issued in 1960 to 38% in 1979. In the same 20 year period, the foreign controlled portion of the U.S. consumer electronics market increased from 5.6% to 50.6% and the foreign market position for metal working machine tools grew from 3.2% to 28%.

I need not tell this audience of the severe shortages of manpower in many technical occupational fields caused by the shift in national priorities.

We have compiled a list of 15 skill fields -- from riveters to electrical engineers -- that must have an annual growth rate of over 3.8% if we are to meet our peacetime defense needs between now and 1989. One field, shipfitters, must grow 16.4% annually. My hope is that industry and the vocational education community will join with us developing creative approaches for training workers to correct those critical shortages.

The Soviet Union has a strong headstart. While only 50% of American students study any science or mathematics beyond the 10th grade, all Soviet high school graduates have had two years of algebra and geometry in elementary school and fours years of algebra and calculus in high school. Not surprisingly, the Soviet Union graduates from college almost five times more specialists in engineering fields than the United States. And the Soviet military has unlimited access to the best of those graduates.

In the United States, with a dwindling pool of engineers and technical specialists, the situation is reversed. The military must compete with industry for skilled workers; defense industries must compete with industries serving lucrative civilian markets. Because the military usually cannot match civilian salaries in scarce skills, and because Defense business is often less attractive than commercial business, Defense is usually the loser in any competition for skilled manpower with the civilian sector in the United States.

What we need to do is not halt that competition by giving all priority to the Defense sector as the Soviets have done. We need to make the pool of technically skilled manpower available to Defense and industry bigger. That we can do best through education. We already have a vocational education system -- Federal, state, and local -- in place. In the next two days you will hear how Defense is using that vocational educational system to train contractor personnel, active duty military, reserves and national guard, and DoD's own civilian work force. Our challenge is to find creative ways to expand this cooperation to meet our nation's critical needs.

Before I conclude, I would like to highlight some of the more promising efforts underway within the Defense Department. We have had great success with the "Tools for Schools" program that loans plant equipment to vocational programs. Since 1974, almost 300,000 students have graduated from programs we have supported. We now have $52 million of equipment being used by 83,000 students. At the U.S. Skill Olympics held in Atlanta this past summer, four of the six winners in the metal working competition were from programs having loans with the Defense Department. We are proud of our graduates and of our program.

We also have numerous cooperative ventures between military installations and state and industrial vocational organizations. In a typical case, Tinker Air Force Base and the Oklahoma Department of Vocational Technical Education have had great success with training workers on-base in seven different skills. Similar classroom and on-the-job training programs take place daily at bases around the country.

We have also sought ways to make technology work for us to lessen the training burdens on our armed forces. We are building sophisticated equipment that is easier to operate and maintain. Most tankers praise the new M-1 Abrams tank -- the world's most advanced tank -- as the easiest to drive and fire. To make our equipment simpler to repair, we have designed it with built in test equipment and easily-replaced modules. And we have built sophisticated simulators to train our pilots, crewmen, and generals.

Finally, we have taken other initiatives that, because they will improve stability of our Defense industries, will enable industry to plan and participate more fully in the revitalization of our nation's technical manpower base. We have, for example, obtained permission from Congress for multi-year procurement of certain weapons. That means that now we can make firm commitments for several years of purchases and provide defense contractors with up-front funds to make capital investments. Our hope is that some of those investments will be for vocational training programs in skills needed by those industries.

That is now we will succeed, then. American industry, our vocational education institutions, and government agencies all working together. It is a worthwhile endeavor,.... an essential effort. For it will guarantee America's future, it will assure us of the strength that we require to preserve peace with freedom.

Thank you.

APPENDIX D

REMARKS BY THE HONORABLE T. H. BELL

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U.S. DEPARTMENT OF EDUCATION

REMARKS BY THE SECRETARY OF EDUCATION
TO THE
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Thank you for that kind introduction. I'm pleased to have been asked to welcome you to the Nation's Capital and to this seminar on a topic so vital to the future of our nation.

This gathering is the direct outgrowth of an exchange of letters between "CAP" and me as we work together to implement President Reagan's Defense Preparedness Program.

The Departments of Education and Defense have worked successfully together before. Their cooperation extends back to World War II, the great depression in which the Civilian Conservation Corps (CCC) camps were run by the Army with teachers recruited by the Office of Education, World War II, and the Post War era. Since the launching of the Sputnik Space Satelite, this nation has been made keenly aware of the need for further scientific and technological advances in both the civilian and military aspects of our society. Education can contribute more in the future to improve the education skills needed for this defense technology and that is one of the reasons we are here today.

I'd like to leave the specifics of this seminar to the vocational education experts - home grown and out of towners - and discuss the larger implications of this very important seminar.

The key Reagan Administration policies that directly affect both Defense and Education Departments are:

1. Support for a stronger and more modern defense capability ($1 trillion plus build-up).

2. Reduction of burden imposed by Federal regulatory programs.

3. Less involvement in matters more appropriately handled by state and local governments.

4. Efficient management of federal grants.

We all know that a special benefit of military service is a fantastic array of educational opportunities that can't be beat. I especially remember the superb training which I received and participated in during World War II thanks to the U.S. Marine Corps. Consider what the Army alone awarded in 1981; 13,000 High School Equivalency certificates, 3,800 High School Diplomas, 11,000 Vocational certificates, 2,000 Associate Degrees, 1,100 Bachelor Degrees, 1,800 Master's Degrees, and 14 Ph.Ds.

In addition to the civilian education programs there were basic and advanced military training for each career field: foreign language training, counseling and testing, and service related correspondence courses.

As I look back and reflect on the training activities that we in the Marine Corps engaged in 40 years ago and recall the excellent training manuals, training aids, and training techniques, I often wonder what closer cooperation with defense might have meant to the vocational technical schools of America.

Indeed, now more than ever it seems to me that the Defense and Education Departments should cooperate through the "honest broker and facilitor roles" to meet the challenges of high technology, the second industrial revolution, and "the comming boom".

There is the economic challenge of Japan and the so-called East Asia Edge to be considered, as well as the military challenge of the USSR and the training demands of sophisticated weapons systems. There are the demographic challenges of information/electronics and robotics to different regions (Frost-Belt vs. Sun-Belt) and the old and new manufacturing areas. There are educational challenges which face us in such areas as basic skills, enhanced excellence, high standards, new skills (math/science/computers) languages (English and foreign).

A recent report, "Information Technology and Its Impact on American Education", by the Congress's Office of Technology Assessment states in no uncertain terms that the informatijon revolution (computers and electronics) is going to have a profound effect on American education and training. By implication the Defense Department will be affected since, after all, it deals primarily in the training and development of the "Human Capital" which our diverse educational establishment graduates each year.

If the report is correct and I feel it is, then the "severe training problems" predicted for our country in the next decade will inevitably include both our Departments for the defense and education needs of our people and nation are inextricably intertwined.

Specifically, the Office of Technology Assessment report predicts the following. There will be a persistent shortage of highly trained computer scientists, engineers and other specialists. There will be a need for retraining workers displaced by factory and office automation. There is a need for a more technologically literate work force, including of course the military.

The many challenges facing our society have at their root the need to encourage all sectors of our diverse education system to stress excellence and high standards in general and in particular to emphasize a greater and greater commitment to:

- Mastering math and science to the best of individual ability

- Emphasizing the basic skills including the speaking, reading, and writing of the English language for that mastery is the overlooked golden key to success in this terribly competitive society of ours.

I am looking forward to the report of your deliberations and hope this gathering is just the beginning of a fruitful collaboration of our two departments. The American people expect a closer cooperation, communication, and collaboration among educators, the military, and private industry. And they will get it if "CAP" and I have anything to say about it.

Before I leave I'd like to exercise one of the privileges of rank and make a tentative suggestion that really comes out of the good work that you have already done. Here are some recommendations that I hope you might consider:

- That a permanent task force be established to consider ways that the Education Department can contribute to furthering missions of the Defense Department in the area of general basic education and to help the Education Department highlight more effective training and education practices and programs that can be made available to regional, state and LEA's especially in the area of vocational-technical training.

- Another function of this task force would be to draft an inter-agency agreement between the Department of Education and the Department of Defense whereby further activities, programs and projects could be encouraged on a regularized basis to benefit both the education and defense of our nation.

I wish you every success in this important undertaking.

APPENDIX E

REMARKS BY DR. GENE BOTTOMS

EXECUTIVE DIRECTOR

AMERICAN VOCATIONAL ASSOCIATION

REMARKS BY EXECUTIVE DIRECTOR AMERICAN VOCATIONAL ASSOCIATION TO THE SEMINAR ON VOCATIONAL EDUCATION AND DEFENSE PREPAREDNESS - 30 SEPTEMBER 1982

CAPABILITIES OF A VOCATIONAL AND TECHNICAL EDUCATIONAL COMMUNITY

The American Vocational Association is very pleased to work with the Department of Education and the Defense Department in sponsoring this seminar in defense preparedness. My objective this morning is to assist in promoting understanding in reference to the capabilities of vocational and technical education.

This is not an easy task, for public and private vocational education in America contain an extremely diverse set of programs. However, I will seek to do this by looking at the institutions that deliver vocational and technical education in America, by examining the nature of vocational education programs, the enrollment pattern, the organization, the use of the community as part of the vocational education structural effort, and the support capacity that has been developed to enhance quality vocational education programs. I will conclude with possible cooperative arrangements in vocational education and defense preparedness.

The potential of vocational education to impact the human development requirements for national defense can be seen in numerous institutions that deliver it. There are approximately 26,000 plus institutions involved in delivering vocational education in America.

Today there exist over 10,000 general high schools in America that usually offer 1, 2, 3, and, at times, as many as 4 vocational courses. There has been a vast growth in the comprehensive high schools in the last few years, and presently there are approximately 5,000 of these institutions that provide, at least, 6 vocational offerings with 4 being of the laboratory type. In this nation we still have approximately 225 specialized vocational high schools, most of which are located in the larger cities. For the most part these are outstanding institutions with long waiting lists for individuals seeking to enroll. Many of these are magnet centers, and they tend to be specialized in a given occupational area such as aviation, health, etc.

The newest insitution on the American landscape is the area vocational technical center. There now exist 1400 of these centers at the secondary level. These centers have been developed to serve a number of school districts and usually offer 10 or more programs in vocational areas. Not only are secondary youths served during the day, but many adults are also accommodated in the afternoons and evenings.

There exist over 700 community colleges in America that have comprehensive educational offerings and have been classified with the state Board of Vocational Education as area vocational technical centers. These centers have excellent contact with the employment community and are viewed as a major part of a postsecondary delivery system to vocational technical education in this nation. In addition to community colleges there are 162 technical institutes in this nation. Most of them grew due to an emphasis on engineer-

ing technology; however they have expanded across several occupational areas. These are outstanding institutions, and many corporations recruit students from these nationwide.

Several states have elected to use the postsecondary area vocational technical schools as their primary delivery system for vocational education at the postsecondary level. These institutions are comprehensive in that they offer a comprehensive range of vocational programs. There are now over 500 institutions of this kind in America.

There are approximately 308 specialized postsecondary vocational schools in America that tend to offer a vocational program in a specialized occupational area. In addition, there are 586 private secondary schools that offer vocational education, and over 6,800 private and postsecondary institutions delivering vocational education training services in the nation. Many of these institutions delivering vocational education operate on a 16 hour day, this is particularly true among the community colleges. Area vocational technical schools and technical institutes are considered to have programs that have close ties with the employment community and have an outstanding placement record for their graduates. Institutions delivering vocational education to America represent several billion dollars of investment in labs, curriculum and staff, and much of this has been developed over the last 20 years.

One way to describe vocational education programs is to look at the nature of the programs offered throughout the country. It is possible to divide vocational programs into two types - those that provide preparation in non-occupational specific areas, that is the program is designed to provide people with useful skills in the workplace, and those programs that are occupational specific designed to prepare individuals for employment in a given occupational area or job.

From chart 1 you can see that there are basically 4 categories of non-occupational specific areas. One can be labeled the pre-vocational guidance program designed to assist individuals to become aware of opportunities available and to make educational and career decisions. The second type is pre-vocational which includes types of basic skills often provided to special population youth who need to upgrade these skills before pursuing an occupational specific program. In addition to pre-vocational programs, there are opportunities to participate in pre-vocational agriculture, industrial arts, business and office, and other vocational areas. Related instruction is a growing part of vocational education, and is increasing in the institutions that deliver vocational education. They provide special related instruction in academic courses which are crucial to the occupational objective. The fourth type is called employability preparation. These consumer and homemaking programs that prepare youth and adults for the occupation of homemaking are considered to be non-occupational specific.

The occupational programs can easily be divided into 4 types. Many states have organized their secondary programs on an occupational cluster basis. They prepare youth for employment in such fields as construction, metal trades, and graphic arts, whereas the secondary and postsecondary programs in other states tend to prepare people in occupational areas which are somewhat narrower in focus than the occupational cluster approach which

allows for greater intensity of effort. The typical programs include machine shop, automotive, tool and dye maker, electronics, etc. By far the largest enrollment is in occupational specific area programs. However, it is not unusual for some adults and youth to want preparation only in a job specific program such as how to be a key puncher, a front end aligner or lathe operator. In such cases individuals know that the occupational specific area will already lead to a job, or they are already employed, and this will help them obtain a better job.

The final type, and the one that currently has the most growth, is employer specific programs where community colleges and vocational technical schools deliver preparation programs for employees of a particular firm(s) customized to their unique needs and objectives. This includes new and expanding industry and industry undergoing major technological changes.

Non-specific occupational enrollment exceeds 10 million individuals, while occupational specific enrollment exceeds 6 million. Approximately 3 million of the occupational specific enrollment is in the secondary level, and another 3 million is in the postsecondary level. These figures do not include the enrollment in private and vocational schools. As you can see from chart 2, the breakdown is presented in the occupational specific enrollment by major program areas of secondary and postsecondary vocational and technical programs.

Vocational education offers occupational specific preparation in over 400 different areas. The potential of vocational education and national defense preparedness is seen in a number of persons enrolled in occupational specific programs critical to national defense. For example, during 1982, as chart 3 shows, there have been a number of occupational specific areas identified. In reference to the number of persons who reported on their employment status several months after completing the program and the actual number of persons entering the military service, the small number of vocational completers who are, in fact, entering the military should be noted.

In fact, of those 1,600,000 vocational education completers in 1980 who reported on their employment status several months after graduation, 16,200 reported entering the military and over 1,500 of these were secondary vocational education graduates. It seems reasonable to assume that students completing secondary and postsecondary education could save defense training cost and provide the military with technically literate recruits. However, I was shocked that the number going into the service was no more than 1%.

Many of the vocational technical programs throughout the country are in the process of updating their programs. This includes both secondary and postsecondary. With the advent of advanced technology, this involves more intensive preparation efforts, and the strengthing of math and science that cuts across major occupational discipline areas.

For those of you from the defense preparedness establishment, you may ask the question: How does one make contact with vocational education in America? Usually contact is made at the local level by contacting the administrator responsible for the programs. For programs offered in community colleges, vocational technical schools, technical institutes, this is usually the occupational dean, the area school director or the president of the institution. In regard to programs which operate under the local board of

education, it is often the local director of vocational education, the building administrator or the systems superintendent.

At the state level, every state in the nation has a state board for vocational education. That board has employed a state director of vocational education with a state staff. That would be your contact point.

Chart 4 - Vocational education is organized into 5 different structures at the State agency level. You will note that in at least 6 states, the state board of education is the same administrator for all education. In 31 states, the state board of vocational education is the same as the state board that handles elementary and secondary education. However, in 8 states there is a separate state board for vocational and technical education. The other states have a variety of arrangements.

Based on technical programs, vocational technical education programs utilize the communities in the delivery of vocational education instruction. The most popular means to use the community for the delivery of vocational education instruction is a cooperative vocational education model in which students spend a portion of their time on the job. These two learning experiences are in fact linked together. Chart 5 provides you with a breakout of a variety of approaches used to involve the comunity both in the establishment of vocational programs and the delivery of vocational education instruction. Public vocational education provides about 80% of the related instruction for the apprenticeship programs in this nation. Extensive use is made particularly in the health occupation field to provide the clinical experience in the work setting. It's estimated that over 1/2 million people preparing themselves in health occupations field spend 30-50% of their time in a health facility as part of their instructional program. In some communities, institutions are using local plant facilities and equipment after work hours for training purposes.

Many vocational technical programs now provide to employers, industry training services. That is, they will work with employers in a collaborative effort to deliver employer specific training services. Further, there is a considerable amount of staff exchange between vocational technical education and the private sector.

The National Advisory Council for Vocational Education estimates that there are over 300,000 employers, workers and labor leaders serving on general and craft advisory committees across America. For the past 20 years a considerable support capacity has developed in this nation to assist in the delivery of quality vocational and technical programs. A major national capacity is the National Center for Vocational and Technical Education at Ohio State University. This center is for research, technical assistance, leadership seminars and gives much impetus to the improvement of vocational education throughout our nation. There exist 6 regional curricula centers in which states share their efforts in curriculum development efforts.

Staff development is a major focus in all states. Vocational teachers come directly from industry and it is essential that there be a staff development system to help them acquire teaching methods and techniques.

It seems to me that there is potential for cooperative arrangements between vocational education and several elements of defense preparedness.

Through this conference, a number of exemplary examples for public and private vocational education and the military are already working together. Training workers for defense industries whether it be for a single industry or a group of industries is a potential area for collaborative efforts between vocational education and these employers. The opportunities are unlimited for collaborative efforts between institutions delivering vocational education and defense industries needing skilled workers in order to meet their contract requirements.

There is no reason why the vocational technical capacity of this nation cannot be utilized in certain specialized training for existing military personnel.

It's only logical that the vocational education graduates of the secondary and postsecondary programs would be considered potential recruits for the Armed Services. I'm surprised that the number is only approximately 1%. It may well be that this is an area needing to be explored further and examined in regard to what might be done to increase the number of vocational graduates going into the active military service.

It seems to me that there's considerable potential in the use of public and technical programs to help strengthen the nation's reserve forces. Often the vocational technical laboratories of this nation are idle on the weekends and that's often the time the reserve forces become active. Both could strengthen each other.

The military has a number of civilian employees. There's no reason why vocational technical education throughout the country cannot do for civilian employees that work for the military the same kind of services they provide to private sector employees. Several examples will be presented as part of the conference.

In summary, we can say the following about the capabilities of the vocational technical programs in America. It is an "inplace" system and it is ongoing. It has over 300,000 professional vocational educators or 26,000 institutions. It has the support capacity for curriculum development, staff development and for sharing information. Strong connections already exist between those programs and employers. Approximately 6 million youth and adults are enrolled in occupationally specific programs. Billions of dollars have been invested in buildings and equipment and extensive use is made of the community for learning purposes. Preparation is offered in over 400 different occupational areas.

Vocational and technical education represents an inplace capacity that is responsive already to the high amount of employer specific training being done. Many collaborative efforts already exist between public institutions delivering vocational education and private sector employers. Vocational education, be it public or private, in connection with defense preparedness must be expanded if appropriate capacities are to be developed to meet the nation's work force requirements. It is my sense that employers and public vocational education are in the midst of reexamining the breadth of vocational education needed to meet the nations need for a qualified workforce. This conference should allow us to learn how to better communicate with each other which is an essential first step to improve cooperative efforts.

Chart 1

WHAT IS VOCATIONAL EDUCATION ?

Pre-Vocational/Guidance

Pre-Vocational Basic Skills

Related Instruction

Employability Preparation

Occupational Group Preparation

Occupational Area Preparation

Job Specific Programs

Customized Job Specific Programs

Source: The Vocational Education Enterprise
Published by the American Vocational Association
1980

Chart 2

WHO IS ENROLLED ?

Occupational Specific

Occupational Area	Secondary	Postsecondary
Agriculture	308,336	76,604
Marketing and Distribution	289,140	312,135
Health	89,134	365,995
Home Economics	147,117	94,970
Business	1,042,897	927,621
Technical	19,754	367,363
Trade & Industrial	916,602	875,450
Other	99,544	46,836
TOTALS	2,912,534	3,066,974

Source: Vocational Education Data Survey
1979-80 (Tables 1202 and 1302)

Chart 3

RANGE OF VOCATIONAL OFFERINGS RELATED TO WORKFORCE NEEDS

	Current Voc Ed Total U.S.	Defense Needs	Enrollments
Construction Crafts Workers	4,384,190	151,450	240,523
Solderers, Welders & Cutters	889,480	81,900	224,791
Other Engineering Technicians	784,930	93,820	*
Computer Specialists	547,040	71,290	212,852
Machinists & Apprentices	572,590	75,410	123,863
Electrical & Electronic Technicians	241,190	60,710	215,331
Aircraft Mechanics	159,790	60,810	42,033
Aeronautical Technicians	116,560	4,970	*
Industrial Engineering Technicians	34,160	6,150	*
Health Technicians	561,310	5,950	*
Machinery & Equipment Mechanics	1,152,490	78,360	*
Tool & Die Makers & Apprentices	223,150	28,160	7,843
Stenographers, Typists & Secretaries	6,043,730	281,390	872,209
Other Precision Machine Operators	88,110	10,770	*

* Enrollment figures not available

Source: 1) Defense Economic Impact Modeling System
Office of Secretary of Defense
2) Vocational Education Data Survey
1979-80 (Table 1203)

Chart 4

STATE GOVERNANCE STRUCTURES

Type A
One agency for all education
6 states

Type B
Agency for elementary, secondary and vocational education and agency for higher education
31 states

Type C
Agency for elementary and secondary education, agency for vocational education and agency for higher education
8 states

Type D
Agency for elementary, secondary and vocational education and governing boards for individual higher education institutions
3 states

Type E
Other structures
2 states

Chart 5

TYPES OF COOPERATIVE ARRANGEMENTS POSSIBLE BETWEEN VOCATIONAL EDUCATION AND THE MILITARY

- Training workers for defense industries
- Upgrading training for active personnel
- Preparatory training for future recruits
- Related instruction for students participating in the Army Reserve or National Guard
- Training for civilian employees

APPENDIX F

REMARKS BY THE HONORABLE ROBERT M. WORTHINGTON

ASSISTANT SECRETARY FOR

VOCATIONAL AND ADULT EDUCATION

U.S. DEPARTMENT OF EDUCATION

REMARKS BY THE ASSISTANT SECRETARY FOR VOCATIONAL AND ADULT EDUCATION
TO THE
SEMINAR ON VOCATIONAL EDUCATION AND DEFENSE PREPAREDNESS

President Reagan has recognized the nature of worldwide threats to our national security. Accordingly this Administration has taken action to strengthen our national defense preparedness. Some of the direct results of these policy changes that could involve vocational education include the expanded technological training of military personnel and civilians, as well as the additional training requirements of the industrial sector created by the demand to produce more technological and advanced weapon systems. Essentially this new thrust will create new opportunities for vocational education as defense related training becomes increasingly important to our nation.

Why should we be concerned during this particular time? A number of studies including one Congressional Report entitled "The Ailing Defense Industrial Base: Unready for Crisis," prepared by the House Committee on the Armed Services, identified broad problems demanding national attention and tenable solutions. Other studies have identified skilled worker shortages in such areas as:

- all categories of engineers,
- medium and high level electronic technicians,
- precision machinists,
- skilled assemblers,
- tool and die makers,
- trained assemblers, and
- shipfitters

The impact of this problem is such that it could seriously impair our defense preparedness expansion.

As the demand for high technology products and military hardware and equipment increases, a proportional demand for skilled technicians is generated. During prior periods of defense expansion, especially during World War II, vocational educators responded magnificently to this challange. I am fully confident that we can similarly respond to these new demands.

Our Department has been highly responsive in supporting the policies of the Administration relating to defense preparedness. The initial step taken toward collaboration between the Department of Education and Department of Defense was a letter sent on August 21, 1981 from Education Secretary T.H. Bell to Defense Secretary Caspar W. Weinberger. As a result of this letter, the Office of Vocational and Adult Education (OVAE) within our Department and The Office of Lawrence Korb, Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics, were designated leadership roles to explore the possibilities for collaborative efforts between the two Departments.

I am going to briefly describe some of our exciting accomplishments. A major continuing activity was the formation and operation of the Defense Preparedness Task Force on October 1, 1981. Highlights of their accomplishments include:

- Conducting 7 monthly seminars on topics such as Defense Economic Impact Modeling System, Employment Opportunities in a Period of Rising Defense Budgets, Metropolitan Areas Most Affected by Defense Spending, and the Relationship of the new Job Training Partnership Act to Defense Preparedness;

- o Establishing a repository of materials relating to defense preparedness and skilled worker shortages;

- o Establishing a collaborative network on defense preparedness; and

- o Providing technical assistance on defense related issues.

A second accomplishment was the convening of a Defense Preparedness Review Group representing industry, public and proprietary postsecondary institutions, State educational agencies, trade associations, and training specialists from the private sector on September 20, 1982.

Outcomes of that session featured:

- o Identification of critical incidents needed for bringing about exemplary vocational, industrial, and military collaboration,

- o Identification of technical assistance needed from OVAE to replicate model programs; and

- o Identification of suggestions for alleviating the skilled worker shortage.

A number of these recommendations have already been acted upon, while others have been incorporated into our 1983 OVAE Management Plan. Copies of the proceedings from the Defense Preparedness Review Group session will be available after the February 1983 scheduled publication date.

The third major accomplishment was the conduct of a Vocational Education and Defense Preparedness Seminar, jointly sponsored by the Department of Education and the Department of Defense, with the support of the American Vocational Association. Featured in that seminar were 19 presentations of exemplary projects focusing upon personnel from the defense industrial base, active military, reserve military, civilians employed by Department of Defense, and those entering the military.

What can we do to continue this momentum? In all candor we should not anticipate new money or legislation from the Federal government due to severe budgetary constraints. There are, however, a number of specific items that can be accomplished using existing resources and facilities. By our working collaboratively in this endeavor, many of the perceived obstacles can rapidly dissipate. I have identified action items for Federal, State, and local attention during this forthcoming year. To achieve these with existing resources will be a challenge for all of us.

Federal initiatives for action include:

- o Identify the need for defense related training for occupations requiring training of one year or longer in duration;

- o Foster training performance that yields increased productivity;

- o Disseminate the best products of research and demonstration relating to defense preparedness;

- Improve data management to keep personnel informed of needs, trends, and developments in skilled shortage areas;

- Encourage greater use and sharing of information with school personnel relating to skilled trade shortages to increase student recruitment in those areas;

- Complete national assessment of this comprehensive issue; and

- Encourage the replication of more of these defense related seminars.

State and local leaders have a need to know what is occurring in defense preparedness to best utilize resources to meet future labor requirements. Action steps to be taken by State and local agencies could include the following:

- Work with key public and private officials to foster development of industrial potential and technology;

- Meet with State economic development agencies to ensure they are updated on vocational achievements and capabilities;

- Conduct mini-defense preparedness seminars similar to the national model;

- Consult with industry and military installation representatives in designing new training programs for emerging needs;

- Distribute information to industry concerning capabilities for training;

- Ascertain whether or not existing job vacancies in defense industries could be addressed in new training programs;

- Create information networks for practitioners on defense preparedness topics utilizing bulletins or newsletters; and

- Increase utilization of defense contractor and military personnel as a means for improving instructional programs.

Coping with skill shortages is important to the military services and to the defense industries; and this can become an exiciting challenge for many of you in the next few years. We have identified a number of steps, which if followed, could make our task easier and more productive. I want to express my appreciation to all of you for the fine projects already underway relating to this national priority, and I have high hopes that you will continue to do our part in strengthening America's defense capabilities.